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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,534	09/26/2003	Greg A. Hupp	TI-36552	3721

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TEXAS INSTRUMENTS INCORPORATED  
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DALLAS, TX 75265

EXAMINER
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ART UNIT	PAPER NUMBER
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2615

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/672,534	<b>Applicant(s)</b> HUPP, GREG A.	
	<b>Examiner</b> Lun-See Lao	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Introduction*

1. This action is response to the 10/672,534 application filed on 09-26-2003. Claims 1-18 are pending.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-10 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gulick (US 2001/0003166) in view of Inoue (US 2003/0059063).

Consider claim 1 Gulick teaches that an audio amplifier electrical circuit comprising:

- a. a pre-amplified audio circuit (see fig.5, (112 and fig.6 (212))) having volume control inputs;
- b. an audio amplifier (114) connected to the pre-amplified audio source (4) that outputs an amplified audio signal;
- c. a power supervisory circuit (108) that monitors the power used by the audio amplifier (114); and
- d. a volume control circuit (see fig.6 (208)) that activates the volume control inputs (see page 3 [0033]-page 4[0039]); but Gulick does not explicitly teaches a volume

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control circuit that activates the volume control inputs when the supervisory circuit detects the power used by the audio amplifier is beyond a pre-determined limit:

However, Inoue teaches a volume control circuit (see fig. 1 (2)) that activates the volume control inputs when the supervisory circuit detects the power used by the audio amplifier is beyond a pre-determined limit (such as set-point value and see page 3 [0028]-[0031]).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Inoue into Gulick so that the amplitude limiting operation starts will be lessened.

Consider claims 2-3 Gulick teaches that the circuit of the pre-amplified audio circuit (see fig. 6 (212)) is a DAC which converts a digital audio signal to a pre-amplified audio signal; and the circuit of the volume control inputs (203) are digital (see page 3 [0028]-[0031]).

Consider claim 4 Inoue teaches the circuit of the supervisory circuit detects (see fig. 1 (2)) a voltage supply to the audio amplifier (3) falls below a pre-determined limit (such as set-point value and see page 3 [0028]-[0031] and see the discussion above claim 1).

Consider claim 12 Gulick teaches that an audio amplifier system for driving computer speakers connected to a USB port comprising (see fig. 5):

a. a bus port (112) connection connectable to a computer (102) from the audio amplifier system having data and power signals inherently (because by the USB port);

- b. a USB DAC (see fig.6 (212)) having volume control inputs and a USB interface (200) which can be connected to a personal computer (102) to receive a digital audio signal and output a corresponding analog audio signal;
- c. an audio amplifier (114) connected to the analog audio signal from the USB DAC (212) that outputs an amplified audio signal (114) for driving speakers (116);
- d. a power supervisory circuit (108) that monitors the power used by the audio amplifier; and
- e. a volume control circuit (see fig.6 (208)) that activates the volume control inputs (see page 3 [0033]-page 4[0039]); but Gulick does not explicitly teaches a volume control circuit that activates the volume control inputs when the supervisory circuit detects the power used by the audio amplifier is beyond a pre-determined limit.

However, Inoue teaches a volume control circuit (see fig. 1 (2)) that activates the volume control inputs when the supervisory circuit detects the power used by the audio amplifier is beyond a pre-determined limit (such as set-point value and see page 3 [0028]-[0031]).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Inoue into Gulick so that the amplitude limiting operation starts will be lessened.

Consider claims 13-15 Gulick teaches the system of the power used by the system is supplied over the bus port (see fig. 5 (112)) connected to the computer (102); and the pre-amplified audio circuit (see fig. 6 (212)) is a DAC which converts a digital audio

signal to a pre-amplified audio signal; and the circuit of the volume control inputs (203) are digital (see page 3 [0028]-[0031]).

Consider claim 16 Inoue teaches the circuit of the supervisory circuit detects (see fig.1 (2)) a voltage supply to the audio amplifier (3) falls below a pre-determined limit (such as set-point value and see page 3 [0028]-[0031] and see the discussion above claim 12).

Consider claim 17 it is essentially similar to claim 16 and is rejected for the reason stated above apropos to claim 16.

Consider claims 5-10 they are essentially similar to claims 12-17 and are rejected for the reason stated above apropos to claims 12-17.

4. Claims 11, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gulick (US 2001/0003166) as modified by Inoue (US 2003/0059063) as applied to claims 5, 12 above, and further in view of Okamoto (US PAT. 6,573,693).

Consider claim 18 Gulick and Inoue do not teach the system of further comprising a resistor between the bus port power signal input and the audio amplifier to insure a voltage drop to the pre-determined limit when the audio amplifier draws current which approaches a limit specified by a USB power signal specification.

However, Okamoto teaches the system (see figs 1-2) of further comprising a resistor (R2) between the bus port power signal input (T1) and the audio amplifier (A1) to insure a voltage drop to the pre-determined limit when the audio amplifier draws current which

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approaches a limit specified by a USB power signal specification (100 and see col. 4 line 16-col. 5 line 64).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Okamoto in to the teaching of Inoue and Gulick so that the amplify audio system will have a voltage drop protecting system.

Consider claim 11 it is essentially similar to claim 18 and is rejected for the reason stated above apropos to claim 18.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gulick (US PAT. 5,818,948) is cited to show other related automatic power foldback for audio applications.

6. Any response to this action should be mailed to:

Mail Stop \_\_\_\_ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:  
**(571) 273-8300**

Hand-delivered responses should be brought to:  
Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner

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can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao, Lun-See L.S.  
Patent Examiner  
US Patent and Trademark Office  
Knox  
571-272-7501  
Date 3-30-2007



VIVIAN CHIN  
SUPERVISOR / PATENT EXAMINER  
TECHNOLOGY CENTER 2600